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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/511,608	04/19/2005	Kenji Kaneko	260987US3PCT	7463

22850 7590 03/31/2009

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EXAMINER
MARC, MCDIEUNEL

ART UNIT	PAPER NUMBER
3664	

NOTIFICATION DATE	DELIVERY MODE
03/31/2009	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/511,608	KANEKO ET AL.	
	Examiner	Art Unit	
	MCDIEUNEL MARC	3664	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *05 January 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-18* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-18* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *04 November 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-18 are pending.

2. The abstract of the disclosure is objected to because of the word "invention". Correction is required. See MPEP § 608.01(b) is maintained.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

4. Claims 1-18 are rejected under 35 U.S.C. 102(e) as being anticipated by **Takenaka et al.** (U.S. Pat. No. 6,243,623 B1).

As per claims 1 and 4, **Takenaka et al.** teaches a system and an associated method legged mobile robot which equals to a walking control for a legged robot (see fig. 1), wherein walking control is performed using a foot-sole coordinate system (see fig. 2, wherein foot-sole coordination based on the foot's position then one end up with a foot deformation) based on sole positions and having at least a first coordinate axis in a direction connecting soles of legs (see fig. 2, wherein the line parallel to 22R(L) has been considered as first axis) and a second coordinate axis perpendicular to the first coordinate axis in a horizontal plane (see fig. 2, element 22R(L)), and a coordinate axis extending in the vertical direction as a control coordinate system for the walking control (see fig. 2, particularly element 32).

As per claim 2, **Takenaka et al.** teaches a method wherein attitude control is performed with different control characteristics for the first and second coordinate axes of the foot-sole coordinate system in the horizontal plane (see fig. 2, wherein foot-sole coordination based on the foot's position then one end up with a foot deformation, bear in mind it is known that first and second foot require different control, therefore has no patentable weight).

As per claim 3, **Takenaka et al.** teaches a method wherein the control characteristics are changed depending on the state of ground-contacting legs (see figs. 2 and10-17) detected by ground contact sensors or a motion generator provided in the legged robot (see fig. 1 and 4).

As per claim 5, **Takenaka et al.** teaches a system that further comprising sole position sensors on the legs, the sole position sensors detecting the sole positions (see fig. 2, element 44), wherein the control device (see col. 1, line 6, particularly "a control system") controls leg actuators provided on the legs for walking on the basis of the sole positions detected by the sole position sensors (see fig. 2 and col. 9, lines 36-41).

As per claim 6, **Takenaka et al.** teaches a system that further comprising ground contact sensors on the legs, the ground contact sensors detecting the contact states of the legs (see fig. 2, element 44), wherein the control device (see col. 1, line 6, particularly "a control system") performs the walking control by performing a coordinate transformation to a coordinate system based on the direction connecting the soles of the legs in accordance with the sole positions detected by the sole position sensors and the contact states detected by the ground contact sensors (see figs. 2, 21 and col. 17, lines 3-5).

As per claim 7, **Takenaka et al.** teaches a system that further comprising a motion generator for generating the state of ground-contacting legs (see figs. 1-5), wherein the control device (see col. 1, line 6, particularly "a control system") performs the walking control by performing a coordinate transformation to a coordinate system based on the direction connecting the soles of the legs in accordance with the sole positions detected by the sole position sensors and a motion state detected by the motion generator (see fig. 2 and fig. 4, particularly the gait generator).

As per claim 8, **Takenaka et al.** teaches a system wherein the control device (see col. 1, line 6, particularly "a control system") inputs control parameters with a coordinate system based

on the sole positions detected by the sole position sensors (see fig. 2, element 44 has been considered as position sensor) and sets control characteristics in accordance with the input control parameters (see fig. 1, elements 26 and 60).

As per claims 9 and 13, **Takenaka et al.** teaches a system wherein the control device (see col. 1, line 6, particularly "a control system") changes the control characteristics depending on the state of the ground-contacting legs detected by the ground contact sensors or the motion generator (see figs. 2, 42, 43 and col. 17, lines 3-5).

As per claim 10, **Takenaka et al.** teaches a system wherein the control device (see col. 1, line 6, particularly "a control system") includes coordinate transforming means for transforming sensor information detected in a coordinate system included in the sensors into the foot-sole coordinate system (see fig. 2, wherein foot-sole coordination based on the foot's position then one end up with a foot deformation) based on the sole positions of the ground-contacting legs (see fig. 1, element 26 and fig. 4).

As per claim 11, **Takenaka et al.** teaches a system wherein the control device (see col. 1, line 6, particularly "a control system") includes coordinate transforming means for transforming motion pattern information described in a coordinate system based on the moving direction into the foot-sole coordinate system (see fig. 2, wherein foot-sole coordination based on the foot's position then one end up with a foot deformation) based on the direction connecting the soles of the legs (see fig. 4, particularly the gait generator as noted above).

As per claim 12, **Takenaka et al.** teaches a system that further comprising coordinate transforming means for transforming signals generated in the foot-sole coordinate system (see

fig. 2, wherein foot-sole coordination based on the foot's position then one end up with a foot deformation) based on the direction connecting the soles of the legs into one of the sensor coordinate system included in the sensors (see fig. 2, element 44 as noted above), the moving-direction coordinate system based on the moving direction of the legged robot (see fig. 1) , and a body coordinate system based on the body of the legged robot (see fig. 1) (see fig. 1).

As per claim 14, **Takenaka et al.** teaches a system wherein the control device (see col. 1, line 6, particularly "a control system") includes coordinate transforming means for transforming sensor information detected in a coordinate system included in the sensors into the foot-sole coordinate system (see fig. 2, wherein foot-sole coordination based on the foot's position then one end up with a foot deformation) based on the sole positions of the ground-contacting legs.

As per claim 15, **Takenaka et al.** teaches a system wherein the control device (see col. 1, line 6, particularly "a control system") includes coordinate transforming means for transforming motion pattern information described in a coordinate system based on the moving direction into the foot-sole coordinate system based on the direction connecting the soles of the legs (see fig. 2, wherein foot-sole coordination based on the foot's position then one end up with a foot deformation).

As per claims 16-18, **Takenaka et al.** teaches a system that further comprising coordinate transforming means for transforming signals generated in the foot-sole coordinate system (see fig. 2, wherein foot-sole coordination based on the foot's position then one end up with a foot deformation) based on the direction connecting the soles of the legs into one of the sensor coordinate system included in the sensor (see fig. 1, element 26 and fig. 4 as noted

above), the moving-direction coordinate system based on the moving direction of the legged robot (see fig. 1) , and a body coordinate system based on the body of the legged robot (see fig. 1).

Response to Arguments

5. As to reference no teaching a first coordinate axis in a direction connecting the soles of the legs (see fig. 2, wherein the line parallel to 22R(L) has been considered as first axis as noted above), a second coordinate axis perpendicular to the fist coordinate axis in a horizontal plane (see fig. 2, element 22R(L) as noted above), and a coordinate axis extending in the vertical direction (see fig. 2, line 32 as noted above).

6. Applicant's arguments filed 1/5/2009 have been fully considered but they are not persuasive.

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to MCDIEUNEL MARC whose telephone number is (571)272-6964. The examiner can normally be reached on 6:30-5:00 Mon-Thu.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Khoi Tran can be reached on (571) 272-6919. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/McDieunel Marc/
Examiner, Art Unit 3664

Saturday, March 21, 2009

/KHOI TRAN/
Supervisory Patent Examiner, Art Unit 3664